Indiana Course-Aligned Assessment
Pre-Calculus – Sample Items

1. Convert the rectangular coordinates $(3\sqrt{3}, -3)$ into polar coordinates.

   A $\left(6, \frac{\pi}{3}\right)$

   B $\left(6, -\frac{\pi}{6}\right)$

   C $\left(6, -\frac{\pi}{3}\right)$

   D $\left(-6, \frac{\pi}{6}\right)$

2. Find the area of triangle LMN if $LM = 12$ centimeters, $MN = 5$ centimeters, and the measure of angle $LMN = 32°$.

   A $10.60 \; cm^2$

   B $15.90 \; cm^2$

   C $25.44 \; cm^2$

   D $30.57 \; cm^2$

3. Describe the transformations that must occur to obtain the graph of $y = \cos(2x - 7)$ from the graph of $y = \cos(x)$.

Answer Key

Item	Answer	Alignment
1	B	PC.6.1
2	B	PC.3.3
3	Period change from 2π to π and phase shift right of $7/2$	PC.4.7